



West Nile Virus Newsletter

This is an electronic publication designed to keep you informed on issues of interest related to West Nile virus (WNV) in Washington, and provide current information to assist you in developing a response plan to WNV in your jurisdiction.

Threat Level

The suspected case of WNV infection in a Franklin County man raises the level of concern about possible early WNV activity in our state, and focuses our attention on enhancing surveillance as well as the need for appropriate prevention and control programs. Several local health jurisdictions have developed plans that include phased response criteria that may be of interest, if you need assistance in plan development. They include: Public Health-Seattle and King County, Snohomish Health District, Tacoma-Pierce County Health Department, Kitsap County Health District, Thurston County Public Health, Lewis County Public Health, and Clark County Health Department.

Surveillance News

Ninety-three birds from 24 counties (15 westside and 9 eastside) have been examined for evidence of WNV infection as of May 30, and all have tested negative. Mosquito surveillance to date has shown *Culex tarsalis* and *Culex pipiens* in some westside counties. The Center for Health Promotion and Preventive Medicine at Fort Lewis has also seen increased egg rafts of *Culex pipiens* in many locations, which means that last years' *Culex pipiens* females are actively feeding. *Culex tarsalis* is likely to be present in larger numbers in many areas beginning this month.

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Communicable Disease Epidemiology and Public Health Laboratory Update

A resident of Franklin County, is being evaluated for suspected WNV infection. The resident became ill in mid-May with reported fever, headache, eye pain and a diffuse rash, and was evaluated as an outpatient. Serology collected on the fifth day after onset detected flavivirus IgM antibody by enzyme-linked immunosorbent assay (ELISA) performed at a commercial laboratory. During the incubation period of 2-15 days, this patient did not travel outside of Washington State.

Since this would be the first endemically acquired human WNV infection in Washington, and possibly the first WNV infection reported in a human in the United States during 2003, repeat and confirmatory testing is being performed. Serologic testing using ELISA is available both commercially and at the Washington State Public Health Laboratories. Serologic tests for WNV cross react with other flaviviruses including St. Louis encephalitis, dengue, yellow fever, and Japanese encephalitis so positive IgM results are interpreted as evidence of infection with a flavivirus. Serology should be collected at least eight days after onset of symptoms when 90 percent of people acutely infected with WNV will have developed detectable flavivirus IgM antibody. In this case, if the repeat ELISA test is positive, a plaque reduction neutralization test (PRNT) will be performed at CDC to determine which of the flaviviruses caused the infection. Confirmatory testing with PRNT requires an additional two weeks to perform.

Between January 1, and June 3, 2003, WNV infection has not been identified in horses or birds that have been tested statewide in Washington. WNV activity in birds, horses, sentinel flocks and mosquitoes has been detected in >12 states this year. However, there have not been any confirmed human cases of WNV infection to date.

So far, the local health jurisdiction has not found corroborating ecologic evidence of early WNV activity in Franklin County. Eight dead magpies submitted last week from the Tri-cities area were negative for WNV, and larval dips have not identified significant mosquito breeding sites.

Check Out Licensing Requirements for Mosquito Control

(The following article is provide courtesy of the Washington State Department of Agriculture [WSDA])

As mosquito control districts and public health departments prepare for the possibility of new cases of the West Nile virus, WSDA has begun to receive an increasing number of queries about the proper pesticide licenses for conducting mosquito-control applications.

Whether or not a pesticide license is required depends on whom you work for, and the type of pesticides being applied. Any *commercial application* of a mosquito-control pesticide requires a license. *Public employees* require a license when using power equipment or a restricted use pesticide. *Individuals* applying pesticide to their property or an employer's land only need a license when applying a restricted use pesticide.

So, do mosquito-control products fall in the restricted use category? Some do while others do not. With only a few exceptions, pesticides applied to aquatic sites, including those used to control *mosquito larvae*, are state restricted use. Pesticides used to control *adult mosquitoes* may or may not be restricted use. To identify restricted use products, take the time to review the front panel of the pesticide label.

If an applicator license is required in the use of mosquito-control pesticides, one of the following types of licenses will be needed.

- *Private Applicator*: Person who applies or supervises the use of a restricted use pesticide to their own or their employer's agricultural land (farms, ranches, greenhouses, nurseries, forests, etc.).

- *Private Commercial Applicator*: Person who applies or supervises the use of a restricted use pesticide to their own or an employer's non-agricultural land (i.e. apartment complexes, private golf courses, private institutions, apple warehouses, grain storage facilities).
- *Commercial Applicator*: Head of a commercial business that applies pesticides to the land/property of others.
- *Commercial Operator*: Employee of a commercial applicator who applies or supervises the use of any pesticide as part of the business; may also consult on the use of pesticides.
- *Public Operator*: Public employee who, as part of their public agency job, applies or supervises the use of any pesticide through power equipment or any restricted use pesticide (i.e. city, county, state, federal, or public utility); may also consult on the use of pesticides.

In order to qualify for one or more of the above licenses, an individual must pass the appropriate exams. Private applicators need to pass the *Private Applicator Exam*. They also need to pass the *Aquatic Exam*, when making larvicide applications to water that flows off an agricultural property. All other license types must pass the *Laws & Safety Exam*, and category exams in areas in which they plan to work.

Here is a review of the categories that might be appropriate.

- Public Health Pest Control and the statewide categories allow for both larvicide and adulticide applications (*note: The exam for the statewide category is no longer available*).
- Aquatic Pest Control allows for both larvicide and adulticide aquatic applications.
- The following categories allow for adulticide applications on premises described by the category:
 - Agricultural Insect and Disease,
 - Turf and Ornamental Insect and Disease, and
 - Pest Control Operator General (sites include those in and around homes and other buildings).
- Livestock Pest Control allows for applications on and around livestock.

For further information on licensing requirements, go to <http://www.wa.gov/agr/PestFert/LicensingEd/Licensing.htm> - [GettingLicensed](#) or call Pesticide Licensing toll free, (877) 301-4555.

Permit Update

NPDES permit coverage for mosquito control has been extended to 26 local and state entities and 16 other applications are in process. If you are considering larvicide applications to reduce summer mosquito populations, now is the time to secure the permit and required licenses. You can apply for a permit online at www.doh.wa.gov/ehp/ts/Zoo/WNV/Permit.html.



Mosquito Focus – *Culex tarsalis*

Culex tarsalis, the most important mosquito vector of arboviruses in western North America, is one of the most widespread species in Washington. This mosquito has been responsible for maintenance, amplification, and epidemic transmission of St. Louis and western equine encephalitis viruses, primarily in irrigated and riparian habitats. It was the primary vector for the outbreaks of western equine encephalitis in central Washington in the late 30s and early 40s. It is also expected to be one of the major vector species for WNV transmission.

Egg rafts are deposited in a variety of habitats including permanent and semi-permanent waters such as stormwater ponds, ditches, and marshes. Larvae may also be found in artificial containers of all types. A female can lay eggs several times a season with up to 300 eggs in a raft. Larvae tolerate a wide range of water conditions and may be abundant in agricultural areas, secondary treated sewage effluent, and wetlands.

In spring, when mosquito populations are low, most females feed on birds. House sparrows, doves, and quail have been found to be frequently infected. The species also readily feeds on chickens, making them good sentinels for monitoring enzootic transmission activity. During summer, when mosquito abundance is high, bird-mosquito avoidance behavior diverts many females to feed on mammals, including horses, cattle and humans, biting mainly during the evening. Flight range can be up to several miles.

Dead Bird Data and GIS

Information on the use of GIS with dead bird data to target WNV control and prevention efforts is discussed in an article available at: <http://www.geoplance.com/gw/2003/0306/0306wnv.asp>. Additional information on the use of dead bird data to predict and target control/prevention will be presented in the next newsletter.

Community Comments

Let us hear your comments on this newsletter, your needs, or things you would like to see, by sending them to Maryanne Guichard, (360) 236-3391 or maryanne.guichard@doh.wa.gov.

WNV Web Resources

Washington State Department of Health www.doh.wa.gov/wnv

Center for Disease Control <http://www.cdc.gov/ncidod/dvbid/westnile/>

Washington State University Cooperative Extension <http://wnv.wsu.edu/>

Cornell University, Center for Environment <http://www.cfe.cornell.edu/erap/WNV>

DOH Contact List for West Nile Virus

General Public Toll-Free Hotline 1-866-78VIRUS

Publications: Brochures/Response Plan/Fact Sheets

Laura Harper, (360) 236-3380, or laura.harper@doh.wa.gov.

Surveillance: Mosquito

Jo Marie Brauner, (360) 236-3064, or jomarie.brauner@doh.wa.gov.

Surveillance: Dead bird surveillance and general WNV response

Tom Gibbs, (360) 236-3060, or tom.gibbs@doh.wa.gov.

Surveillance: Horses, case reporting, laboratory assistance

Dr. John Grendon, (360) 236-3362, or john.grendon@doh.wa.gov.

NPDES: Training, technical assistance

Ben Hamilton, (360) 236-3364, or benjamin.hamilton@doh.wa.gov.

WNV in Humans: Clinical information, case reporting, and laboratory testing

Call your local health jurisdiction or DOH Communicable Disease Epidemiology,
(206) 361-2914 or (877) 539-4344.

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